AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

1. (currently amended) An apparatus for synthesizing a carbon nano-material, comprising:

a reaction gas supplier for supplying a reaction gas in isolation from atmospheric condition;

a metallic catalyst supplier for supplying a metallic catalyst in isolation from atmospheric condition;

a reactor communicating with the reaction gas supplier and the metallic catalyst supplier and providing a space for synthesis of the carbon nano-material, the reactor being a tube made of quartz, wherein the carbon nano-material is synthesized while the reaction gas and the metallic catalyst pass through the reactor;

a heating means, positioned outside the reactor, for heating the reactor to a temperature proper for the synthesis of the carbon nano-material; ~~and~~

a reflector, positioned opposite the heating means about the reactor, for reflecting the heat provided by the heating means toward the reactor; and

a collecting means communicating with the reactor for collecting the carbon nano-material generated in the reactor.

2. (original) The apparatus of Claim 1, wherein the reaction gas is methane, ethylene, acetylene, carbon monoxide, cyclohexane, benzene, or xylene.

3. (original) The apparatus of Claim 1, wherein the metallic catalyst is metal nitrate.

4. (cancelled)

5. (original) The apparatus of Claim 1, wherein the heating means is a surface flame burner.

6. (cancelled)

7. (currently amended) The apparatus of Claim 1 [[or 4]], wherein the reactor extends in a helical form.

8. (currently amended) The apparatus of Claim 1 [[or 4]], wherein the reactor extends in a zigzag form.

9. (original) The apparatus of Claim 1, wherein the collecting means further comprises:

a charging unit communicating with the reactor, in which the produced carbon nano-material is electrically charged; and

a separation unit communicating with the charging unit, provided with a pair of plates, which are connected to a direct current power source, wherein each of the plates has an electric polarity different from each other.